JAPAN

EDICT OF GOVERNMENT

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JIS B 6549 (1991) (English): Glue spreaders -- Test and inspection methods

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The citizens of a nation must honor the laws of the land.

Fukuzawa Yukichi

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JIS

JAPANESE INDUSTRIAL STANDARD

Glue spreaders — Test and inspection methods

JIS B 6549–1991

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JAPANESE INDUSTRIAL STANDARD J I S

Glue spreaders - Test and inspection methods B 6549-1991

1. Scope

This Japanese Industrial Standard specifies the testing methods for function, operational performance and rigidity as well as the inspection methods for static accuracy and fabricating accuracy of the glue spreaders the rolls of which are provided with lengths longer than 900 mm and shorter than 4500 mm.

Remarks 1. The glue spreader is the machine used for coating a specific amount of adhesives on the adherent surface of veneer, board materials or the like by means of rotating roll (see JIS B 0114).

2. The applicable standards to this Standard are as follows:

JIS B 0114-Glossary of terms for wood working machinery.

JIS B 6507-General code of safety for wood working machinery.

JIS B 6521-Methods of measurement for noise emitted by wood working machinery.

3. The units and numerical values given in { } in this Standard are based on the traditional units and are written for reference.

2. Function Test Methods

The test on the function of the glue spreader shall conform to the specification in Table 1.

Table 1. Function test

No.	Test items	Test method
1	Electric apparatus	Check for insulating condition once before and after the operation inspection respectively.
2	Starting, stop and operation of driving mechanism	Repeat starting and stop ten times to test the smoothness and dependability of actuation.
3	Changing operation of rotational speed of coating roll	Check at every marked rotational speed of coating roll and with a variable speed system, change the rotational speed to three stages of lowest, middle and highest to test the smoothness of operational mechanism actuation and the accuracy of indication.
4	Changing operation of rotational speed of doctor roll	Check at every marked rotational speed of doctor roll, and with a variable speed system, change the rotational speed to three stages of lowest, middle and highest to test the smoothness of operational mechanism actuation and the accuracy of indication.
5	Coated amount adjusting device	Test on the smoothness and dependability of function.
6	Adhesive circulating device	Test on the smoothness and dependability of function.
7	Safety device	Test on the dependability of safety function for workers and machine protection function (see JIS B 6507).
8	Lubricating apparatus	Test on the dependability of the function such as oil tightness and appropriate amount of oil distribution.
9	Hydraulic apparatus	Test on the dependability of the function such as oil tightness and pressure adjusting.
10	Pneumatic apparatus	Test on the dependability of the function such as airtightness and pressure adjusting.
11	Accessories	Test on the dependability of function.

Remarks: For the glue spreader which lacks any function mentioned above, the test item corresponding to it in Table 1 may be omitted.

3. Operation test method

3.1 No-load operation test method Actuate the coating roll and doctor roll and continue the operation for 30 to 60 minutes to stabilize the temperature of bearings and then measure the power consumed and the noise, fill in the Record Form 1 in Table 2 as to each item and observe by the touch to be free from the irregular vibration.

The measurement of noise shall be carried out in accordance with JIS B 6521.

Table 2. Record form 1

No.	Time of measurement (h·min)	Roll	Peripheral speed of coating roll m/min		Peripheral speed of doctor roll m/min		Temperature of bearing °C				Required power			Noise dB (A)	Room temperature °C	Description
							Coating roll		Doctor roll		Voltage	Current	Input			
			Marked	Measured	Marked	Measured	Left	Right	Left	Right	V	A	kW			
		Upper														
		Lower														

Remarks 1. Peripheral speed of coating roll and doctor roll controlled by the speed change gear shall be recorded for the peripheral speed at two speeds at least, including the maximum peripheral speed.

2. Measurement condition of noise shall be recorded in the column of Description.

3.2 Loaded operation test method Apply the adhesive on the test piece and measure the power consumed and the noise, fill in the Record Form 2 in Table 3 as to each item and observe by the touch to be free from the irregular vibration and the condition of coated weight.

For measurement of the power consumed, the test shall be carried out at the fixed thickness of the test piece and changing the peripheral speed of coating roll with the exception of that without speed change gear.

The measurement of noise shall be carried out in accordance with JIS B 6521.

Table 3. Record form 2

No.	Test piece					Adhesive		Roll	Coating roll				Power consumed				Coating condition					Noise	Temperature	Humidity	Description
	Dimension			Classification of wood	Moisture content	Classification	Viscosity		Diameter	Material	Hardness	Shape of groove	Voltage	Current	Input		Coating power	Peripheral speed of coating roll	Peripheral speed of doctor roll	Distance between coating rolls	Distance between coating roll and doctor roll	Coated weight				
	Length	Width	Thickness												Not-loaded	Loaded										
	mm	mm	mm		%		Pa·s		mm				V	A	P_0 kW	P_1 kW	P_1-P_0 kW	m/min	m/min	mm	mm	g/m²	dB (A)	°C	%	
								Upper																		
								Lower																		

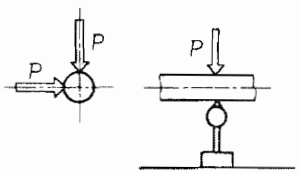
Remarks 1. Coating method (one side or both sides) and noise measurement condition shall be written in the column of Description.

2. Shape of groove shall be shown with the diagram, the main dimension of which is indicated.

4. Rigidity test method

The rigidity test on the glue spreader shall be in accordance with Table 4.

Table 4. Rigidity test

No.	Test item	Measuring method	Figure for measuring method
1	Bending rigidity of doctor roll	Apply the fixed indicator to the middle part of the doctor roll and apply the load (P) perpendicular to the doctor roll([1]) to measure the deflection of doctor roll. This measurement is carried out applying the load in two directions making 90° to each other.	

Note ([1]) Position on which the load is applied shall be the middle of doctor roll as far as possible, and the distance from the fixed end of the doctor roll shall be recorded.

Remarks 1. Rigidity test on the machine based on the same design can be represented by the test result carried out on the typical one and the test on the rest can be omitted.

2. Magnitude of the load (P) shall be the value recommended by the manufacturer and it shall be recorded.

3. This measurement shall be carried out after rotating the doctor roll to stabilize the temperature of the bearing.

5. Static accuracy inspection method

The static accuracy inspection for the glue spreaders shall be based on Table 5.

Table 5. Static accuracy inspection

Unit: mm

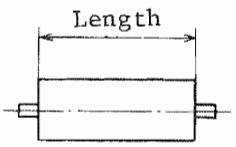
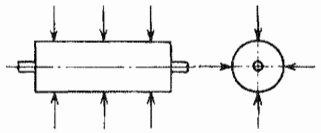
No.	Inspection item	Measuring method	Figure for measuring method	Tolerance
1	Relative difference of lengths of roll	Measure the length of a pair of coating roll and doctor roll using vernier calipers(2) and take each difference of readings as the measured value.		0.60
2	Cylindricity of doctor roll	Measure each diameter of the roll in two planes including the roll center line and intersecting at a right angle to each other and take a larger reading of the maximum difference of the roll diameter in the planes as the measured value. Perform these measurements on at least three points, the center and both ends(3) of the roll.		0.02 for rolls of length of 3000 or less and 0.03 for rolls of length more than 3000

Table 5. (Continued)

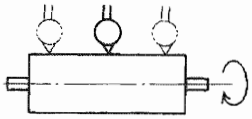
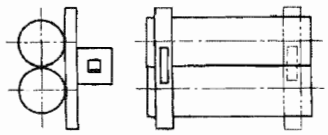
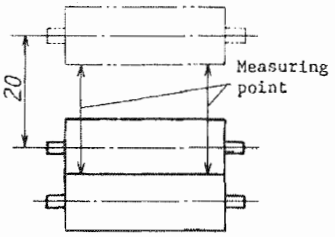
No.	Inspection item		Measuring method	Figure for measuring method	Tolerance
3	Run-out of roll	Coating roll	Apply a test indicator point onto the periphery of the roll, rotate the roll by hand, take the maximum difference of the readings of the test indicator and take this as the measured value. Perform these measurements on at least three points, the center and both ends of the roll(3).		0.05 for rolls of length of 3000 or less, and 0.06 for rolls of length more than 3000
		Doctor roll			0.04 for rolls of length of 3000 or less, and 0.05 for rolls of length more than 3000
4	Parallelism between upper coating roll and lower coating roll(4)		Make the distance between upper coating roll and lower coating roll zero, apply a straight rule perpendicular to the upper and lower coating rolls, then apply to it a precision water level and read the precision water level at both ends of coating rolls. Take the difference of readings as the measured value(5).		0.40/m

Table 5. (Continued)

No.	Inspection item	Measuring method	Figure for measuring method	Tolerance
5	Parallelism of vertical motion of upper and lower coating rolls	Make the distance between upper coating roll and lower coating roll zero, then displace the upper coating roll 20 mm upward and measure the displacements at both ends([3]) of coating rolls by means of inside micrometer to take the difference of readings as the measured value.		0.05

Notes ([2]) In this measurement it is allowed to make the measuring jig for its use only in addition to the vernier calipers provided that the precision of the measuring jig is equivalent or superior to the precision of the vernier calipers.

([3]) Measurement shall be made avoiding the part of "roll over".

([4]) This measurement may be carried out before installing the doctor roll according to the construction.

([5]) In this measurement, the position where the run out of the upper coating roll and the lower coating roll is least shall be taken as standard.

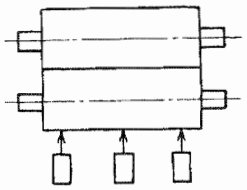
Remarks: For the glue spreader lacking certain function, the corresponding inspection item thereto in Table 5 are omitted.

6. Fabricating accuracy inspection

Conduct the fabricating accuracy inspection of the glue spreaders in the following manner:

Table 6. Fabricating accuracy inspection

Unit: g/m^2

No.	Inspection item	Measuring method	Figure for measuring method	Tolerance
1	Deviation of coated quantity	Place two test boards ([3]) in layers. Pass these pairs of boards through the rolls at the center and on both ends at the same time. Measure the difference of the weight prior and after the coating and take the difference of the maximum and the minimum values of these differences as the measured value.		15.0

Remarks: Test board should be wood of the same classification with the dimension of approximately 300 mm x 600 mm and should be of high quality with uniform thickness and moisture content.

Reference Standards:

JIS B 6501-Test Code for Performance and Accuracy of Wood Working Machinery

JIS Z 8203-SI Units and the Use of Their Multiples and of Certain Other Units

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Japanese Text

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